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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

MBA

SEM: III - THEORY EXAMINATION (2025 - 2026)

Subject: Business Intelligence and Data Warehousing

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

20

1. Attempt all parts:-

- 1-a. Recognize the difference between BI and transaction systems (CO1, K2). 1
- (a) BI analyzes; transactions record
- (b) Both only record sales
- (c) Both only send emails
- (d) BI prints badges
- 1-b. Identify the architectural item for metadata (CO1, K2). 1
- (a) Catalog
- (b) Cupboard
- (c) Clipboard
- (d) Whiteboard
- 1-c. Identify the architecture layer serving business users (CO2, K2). 1
- (a) Semantic layer
- (b) Physical wall
- (c) Keyboard dock
- (d) Chair mat
- 1-d. Identify the store balancing schema-on-read for logs (CO2, K4). 1
- (a) Data lake
- (b) Paper archive
- (c) RAM-only
- (d) Tape vault
- 1-e. Decide the method to link entities across emails (CO3, K4). 1

- (a) Entity resolution
 - (b) Screen mirroring
 - (c) Cable bundling
 - (d) Disk cloning
- 1-f. Select the operation that changes focus to another dimension peer (CO3, K3). 1
- (a) Drill across
 - (b) Dice
 - (c) Roll up
 - (d) Slice
- 1-g. Identify the area used to hold data during ETL (CO4, K3). 1
- (a) Staging
 - (b) Lobby
 - (c) Archive room
 - (d) Inbox
- 1-h. Identify the ETL scheduling practice for daily loads (CO4, K3). 1
- (a) Batch window
 - (b) Lunch break
 - (c) Night lighting
 - (d) Weekend cleaning
- 1-i. Identify the design focusing on analysis with facts (CO5, K4). 1
- (a) Dimensional modeling
 - (b) Random tables
 - (c) Pure ER only
 - (d) Flat notes
- 1-j. Select the table that tracks events without numeric measures (CO5, K4). 1
- (a) Factless fact
 - (b) Heavy fact
 - (c) Super fact
 - (d) Ghost fact

2. Attempt all parts:-

- 2.a. Summarize the concept of Corporate Performance Management (CO1, K2) 2
- 2.b. Discuss how metadata standards improve governance of unstructured data (CO2, K4) 2
- 2.c. Apply OLAP navigation techniques for analysis (CO3, K3) 2
- 2.d. Apply ETL workflows to consolidate data from heterogeneous sources (CO4, K3) 2
- 2.e. Compare normalization vs denormalization in OLAP schema design (CO5, K4) 2

SECTION-B

30

3. Attempt all parts:-

3.a. Answer any one of the following:-

- 3.a.(i) Explain the function of DSS in BI (CO1, K2) 6

3.a.(ii)	Analyze the role of calculated fields in performance analysis (CO1, K4)	6
3.b.	Answer any one of the following:-	
3.b.(i)	Analyze the importance of entity resolution in data integration (CO2, K4)	6
3.b.(ii)	Assess the need for distributed storage for multimedia files (CO2, K4)	6
3.c.	Answer any one of the following:-	
3.c.(i)	Explain OLTP shortcomings in analytical queries (CO3, K3)	6
3.c.(ii)	Show how dimension tables provide context (CO3, K3)	6
3.d.	Answer any one of the following:-	
3.d.(i)	Illustrate the benefits of mastering records (CO4, K3)	6
3.d.(ii)	Apply integration technologies for batch processing (CO4, K3)	6
3.e.	Answer any one of the following:-	
3.e.(i)	Analyze the benefits of conformed dimensions across marts (CO5, K4)	6
3.e.(ii)	Discuss the impact of grain definition on fact tables (CO5, K4)	6
SECTION-C		50
4.	Answer any <u>one</u> of the following:-	
4-a.	Analyze the role of calculated fields in performance analysis and reporting (CO1, K4)	10
4-b.	Design a balanced scorecard for a manufacturing company (CO1, K2)	10
5.	Answer any <u>one</u> of the following:-	
5-a.	Analyze the importance of entity resolution in data integration and quality (CO2, K4)	10
5-b.	Design a data lake structure for mixed data types (CO2, K4)	10
6.	Answer any <u>one</u> of the following:-	
6-a.	Apply MDX queries to retrieve and analyze cube data (CO3, K3)	10
6-b.	Design a hypercube representation for multi-dimensional analysis (CO3, K3)	10
7.	Answer any <u>one</u> of the following:-	
7-a.	Illustrate Kimball's approach for building data marts and its benefits (CO4, K3)	10
7-b.	Create a workflow for handling slowly changing dimensions in ETL (CO4, K3)	10
8.	Answer any <u>one</u> of the following:-	
8-a.	Analyze the role of entities and attributes in data modeling with examples (CO5, K4)	10
8-b.	Analyze and design KPIs for performance management in HR (CO5, K4)	10